

I Claim:

1. A prosthesis to replace all or a portion  
of a natural facet joint on a vertebral body comprising  
a fastening element installed within the  
5 vertebral body at or near a pedicle and without support  
by a lamina, and  
an artificial facet joint structure carried by  
the fastening element adapted and configured to replace  
all or a portion of a natural facet joint.
- 10 2. A prosthesis according to claim 1  
wherein the artificial facet joint structure  
is fixed to the fastening element.
3. A prosthesis according to claim 1  
wherein the artificial facet joint structure  
15 is fixed to the fastening element by an adhesive or  
cement.
4. A prosthesis according to claim 1  
wherein the artificial facet joint structure  
is fixed to the fastening element by mechanical  
20 attachment.
5. A prosthesis according to claim 1  
wherein the artificial facet joint structure  
is removably carried by the fastening element.
6. A prosthesis according to claim 1  
25 wherein the artificial facet joint structure  
is removably attached to the fastening element by  
frictional engagement.
7. A prosthesis according to claim 1  
wherein the artificial facet joint structure  
30 is removably attached to the fastening element by a Morse  
taper.
8. A prosthesis according to claim 1  
wherein the artificial facet joint structure  
comprises an insert fitted to the fastening element.
- 35 9. A prosthesis according to claim 1

wherein the artificial facet joint structure comprises an insert fitted by frictional engagement to the fastening element.

10. A prosthesis according to claim 1  
5 wherein the artificial facet joint structure comprises an insert fitted by a Morse taper to the fastening element.

11. A prosthesis according to claim 1  
10 wherein the artificial facet joint structure comprises a removable insert fitted to the fastening element.

12. A prosthesis according to claim 1  
wherein the artificial facet joint structure pivots with respect to the fastening element.

13. A prosthesis according to claim 1  
15 wherein the artificial facet joint structure is adapted and configured to articulate with a portion of a facet joint of an adjoining vertebral body.

14. A prosthesis according to claim 1  
20 wherein the artificial facet joint structure is adapted and configured to replace a caudal portion of a natural facet joint.

15. A prosthesis according to claim 1  
25 wherein the artificial facet joint structure is adapted and configured to replace a caudal portion of a natural facet joint and articulate with a cephalad portion of a facet joint of an adjoining vertebral body.

16. A prosthesis according to claim 1  
30 wherein the artificial facet joint structure is made of at least one selected prosthetic material.

17. A prosthesis according to claim 1  
wherein the selected prosthetic material includes polyethylene, rubber, tantalum, titanium, chrome cobalt, surgical steel, bony in-growth material, ceramic,  
35 artificial bone, or a combination thereof.

18. A prosthesis according to claim 1  
wherein the fastening element is fixed to the  
vertebral body by an adhesive or cement.

5 19. A prosthesis according to claim 1  
wherein the fastening element includes a bony  
in-growth material.

20. A method of replacing, on a vertebral  
body, all or a portion of a natural facet joint using the  
prosthesis defined in claim 1 to provide improved support  
10 for the spinal column, the method comprising the steps of  
(i) removing all or a portion of a natural  
articular process from the vertebral body, and  
(ii) fixing the prosthesis as defined in claim  
1 to the vertebral body to replace the removed portion of  
15 the natural articular process with the artificial facet  
joint structure.

21. A method according to claim 20  
further including a step of removing at least some of the  
lamina from the vertebral body.

20 22. A method according to claim 20  
further including a step of removing at least  
part of a pedicle from the vertebral body.